APPENDIX 1 – EXCERPTS FROM THE *ENVIRONMENTAL PROTECTION ACT*

The following are excerpts from the *Environmental Protection Act*

1. "Contaminant" means any noise, heat, vibration or substance and includes such other substance as the Minister may prescribe that, where discharged into the environment,
   (a) endangers the health, safety or welfare of persons,
   (b) interferes or is likely to interfere with normal enjoyment of life or property,
   (c) endangers the health of animal life, or
   (d) causes or is likely to cause damage to plant life or to property;

   "Discharge" includes, but not so as to limit the meaning, any pumping, pouring, throwing, dumping, emitting, burning, spraying, spreading, leaking, spilling, or escaping;

   "Environment" means the components of the Earth and includes
   (a) air, land and water,
   (b) all layers of the atmosphere,
   (c) all organic and inorganic matter and living organisms, and
   (d) the interacting natural systems that include components referred to in paragraphs (a) to (c).

   "Inspector" means a person appointed under subsection 3(2) and includes the Chief Environmental Protection Officer.

2.2 The Minister may
   (a) establish, operate and maintain stations to monitor the quality of the environment in the Territories;
   (b) conduct research studies, conferences and training programs relating to contaminants and to the preservation, protection or enhancement of the environment;
   (c) develop, co-ordinate and administer policies, standards, guidelines and codes of practice relating to the preservation, protection or enhancement of the environment;
   (d) collect, publish and distribute information relating to contaminants and to the preservation, protection or enhancement of the environment:

3. (1) The Minister shall appoint a Chief Environmental Protection Officer who shall administer and enforce this Act and the regulations.

   (2) The Chief Environmental Protection Officer may appoint inspectors and shall specify in the appointment the powers that may be exercised and the duties that may be performed by the inspector under this Act and regulations.

5. (1) Subject to subsection (3), no person shall discharge or permit the discharge of a contaminant into the environment.

   (3) Subsection (1) does not apply where the person who discharged the contaminant or permitted the discharge of the contaminant establishes that
   (a) the discharge is authorized by this Act or the regulations or by an order issued under this Act or the regulations;
   (b) the contaminant has been used solely for domestic purposes and was discharged from within a dwelling house;
   (c) the contaminant was discharged from the exhaust system of a vehicle;

(d) the discharge of the contaminant resulted from the burning of leaves, foliage, wood, crops or stubble for domestic or agricultural purposes;
(e) the discharge of the contaminant resulted from burning for land clearing or land grading;
(f) the discharge of the contaminant resulted from a fire set by a public official for habitat management of silviculture purposes;
(g) the contaminant was discharged for the purposes of combating a forest fire;
(h) the contaminant is a soil particle or grit discharged in the course of agriculture or horticulture; or
(i) the contaminant is a pesticide classified and labelled as "domestic" under the *Pest Control Products Regulations* (Canada).

(4) The exceptions set out in subsection (3) do not apply where a person discharges a contaminant that the inspector has reasonable grounds to believe is not usually associated with a discharge from the excepted activity.

5.1. Where a discharge of a contaminant into the environment in contravention of this Act or the regulations or the provisions of a permit or license issued under this Act or the regulations occurs or a reasonable likelihood of such a discharge exists, every person causing or contributing to the discharge or increasing the likelihood of such a discharge, and the owner or the person in charge, management or control of the contaminant before its discharge or likely discharge, shall immediately:
(a) subject to any regulations, report the discharge or likely discharge to the person or office designated by the regulations;
(b) take all reasonable measures consistent with public safety to stop the discharge, repair any damage caused by the discharge and prevent or eliminate any danger to life, health, property or the environment that results or may be reasonably expected to result from the discharge or likely discharge; and
(c) make a reasonable effort to notify every member of the public who may be adversely affected by the discharge or likely discharge.

6. (1) Where an inspector believes on reasonable grounds that a discharge of a contaminant in contravention of this Act or the regulations or a provision of a permit or license issued under this Act or the regulations has occurred or is occurring, the inspector may issue an order requiring any person causing or contributing to the discharge or the owner or the person in charge, management or control of the contaminant to stop the discharge by the date named in the order.

7. (1) Notwithstanding section 6, where a person discharges or permits the discharge of a contaminant into the environment, an inspector may order that person to repair or remedy any injury or damage to the environment that results from the discharge.

(2) Where a person fails or neglects to repair or remedy any injury or damage to the environment in accordance with an order made under subsection (1) or where immediate remedial measures are required to protect the environment, the Chief Environmental Protection Officer may cause to be carried out the measures that he or she considers necessary to repair or remedy an injury or damage to the environment that results from any discharge.

APPENDIX 2 – ADDITIONAL DEFINITIONS OF KEY TERMS

Accreditation	Formal recognition of the competence of an environmental analytical laboratory to carry out specified tests. Formal recognition is based on an evaluation of laboratory capability and performance. Site inspections are utilized in the evaluation of capability.
Adverse Effect	An undesirable or harmful effect to an organism, indicated by some result such as mortality, altered food consumption, altered body and organ weights, altered enzyme concentrations or visible pathological changes.
Assess or Assessment	Investigations, monitoring, testing and other information-gathering activities to identify: (1) the existence, source, nature and extent of contamination resulting from the release of a hazardous material or chemical substance into the environment; and (2) the extent of risk to public health, safety, welfare and the environment. The term also includes studies, services, and investigations to plan, manage, decommission and clean up a contaminated site.
Background Area	An area not influenced by contaminants.
Background Samples	Samples without the chemicals of interest that are carried through all steps of the analytical procedure. They are used to provide a reference for determining whether test results are significantly higher than "unpolluted" samples which contain "zero", low, or acceptable levels of the chemicals. All samples, sample containers, reagents, glassware, preparations and instrumental analyses are included in the analysis of background samples.
Blank	The measured value obtained when a specified component of a sample is not present.
Borehole	A hole drilled into the earth and into which casings or screens can be installed to construct a well.
Clean up	The removal of a chemical substance or hazardous material from the environment to prevent, minimize or mitigate damage to public health or safety and the environment that may result from the presence of the substance or material. A clean up is generally carried out to achieve specified remediation criteria or objectives.

Concentration	The amount of chemical or substance in the environment. Concentration is typically expressed as milligrams per liter (mg/L) or micrograms per liter (µg/L) in water, milligrams per kilogram (mg/kg) in soil and food and micrograms per cubic meter (µg/m^3) in air. Concentrations may also be expressed as parts per million (ppm) or parts per billion (ppb). 1 mg/liter = 1 ppm or 1000 ppb 1 µg/liter = 1 ppb 1 mg/kg = 1 ppm or 1000 ppb
Criteria	Numerical standards that are established for chemical substances in soil, water, sediment or air to determine the acceptability of a site for a specific intended land use.
Environmental Analytical Laboratory	A laboratory engaged in the physical, chemical or biological measurement of the receiving environment or discharges to the receiving environment.
Groundwater	All subsurface water that occurs beneath the water table in rocks and geologic formations that are fully saturated.
Hazardous Material	Material that, because of its quality, concentration, chemical composition or corrosive, flammable, reactive, toxic, infectious or radioactive characteristics, constitutes a present or potential threat to human health and safety or the environment when improperly stored, treated, transported, disposed of, used or otherwise managed.
Headspace	The empty volume in a container between the cap and the solid or liquid level of the sample.
Migration	The movement of chemicals, bacteria and gases in flowing water or vapour in the subsurface.
Monitoring	The periodic or routine (i.e. daily, weekly, monthly, quarterly) checking and measurement of certain biological or chemical variables, or the collection and testing of soil, water, sediment or air samples for hazardous materials or toxicity.
Monitoring Well	A well that is used to extract groundwater for physical, chemical or biological testing, or to measure water levels.
Objective	A numerical limit or narrative statement that has been established to protect and maintain a specified use of water, sediment or soil at a particular site by taking into account site-specific conditions. Objectives may be adopted directly as remediation criteria or modified to account for site-specific conditions.

Quality Assurance/Quality Control (QA/QC)	Procedures and controls designed to monitor the conduct of a study to ensure the quality of the data and the integrity of the study are maintained.
Receptor	A person or organism subjected to chemical exposure or an ecosystem component that is, or may be, adversely affected by a pollutant or other stress emanating from a contaminated site. Receptors may include biological or abiotic (i.e. air or water quality) components.
Risk	A measure of both the severity of effects arising from exposure to a substance and the probability of its occurrence.
Risk Assessment	A procedure designed to determine the qualitative aspects of hazard identification and usually a quantitative determination of the level of risk.
Screening	Rapid analysis to determine whether further detailed testing, analysis or remediation is warranted.
Site-Specific Remediation Criteria	Numerical targets established for a specific site to be met through implementation of a Remedial Action Plan and, if appropriate, long-term site management.
Subsoil	Soil which is 1.5 meters (approximately 5 feet) or deeper from the surface.
Surface Soil	Soil which is less than 1.5 meters (approximately 5 feet) from the surface.
Surface Water	Natural water bodies, such as rivers, streams, brooks, lakes and oceans.
Test Pit	A shallow pit made to characterize surface soil and subsoil.

APPENDIX 3 – CANADIAN ENVIRONMENTAL QUALITY OBJECTIVES

Table A3.1 Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health.

Substance	Land Use and Soil Texture							
	Agricultural/ Wildland		Residential/ Parkland		Commercial		Industrial	
	Course	Fine	Course	Fine	Course	Fine	Course	Fine
Arsenic (inorganic)	12		12		12		12	
Barium	750		500		2000		2000	
Benzene								
Surface[a]	0.03	0.0068	0.03	0.0068	0.03	0.0068	0.03	0.0068
Subsoil[a]	0.03	0.0068	0.03	0.0068	0.03	0.0068	0.03	0.0068
Surface[b]	0.0095	0.0068	0.0095	0.0068	0.03	0.0068	0.03	0.0068
Subsoil[b]	0.011	0.0068	0.011	0.0068	0.03	0.0068	0.03	0.0068
Cadmium	1.4		10		22		22	
Chromium								
Total chromium	64		64		87		87	
Hexavalent chromium (IV)	0.4		0.4		1.4		1.4	
Trivalent chromium (III)	No Data		No Data		No Data		No Data	
Copper	63		63		91		91	
Cyanide (free)	0.9		0.9		8.0		8.0	
DDT (total)	0.7[c]		0.7[c]		12[c]		12[c]	
Ethylbenzene								
Surface	0.082	0.018	0.082	0.018	0.082	0.018	0.082	0.018
Subsoil	0.082	0.018	0.082	0.018	0.082	0.018	0.082	0.018
Ethylene glycol	960		960		960		960	
Lead	70		140		260		600	
Mercury (inorganic)	6.6		6.6		24		50	
Nickel	50		50		50		50	
Nonylphenol (and its ethyloxylates)	5.7		5.7		14		14	
Pentachlorophenol	7.6		7.6		7.6		7.6	
Phenol	3.8		3.8		3.8		3.8	
Polychlorinated biphenyls (PCB)	0.5[c]		1.3[c]		33[c]		33[c]	
Polychlorinated di-benzo-p-dioxins/dibenzofurans (PCDD/Fs)	4 ng TEQ/kg[c]		4 ng TEQ/kg[c]		4 ng TEQ/kg[c]		4 ng TEQ/kg[c]	
Propylene glycol	Insuff Info		Insuff Info		Insuff Info		Insuff Info	
Selenium	1		1		2.9		2.9	
Tetrachloromethane	0.1		5		50		50	
Thallium	1		1		1		1	
Toluene								
Surface	0.37	0.08	0.37	0.08	0.37	0.08	0.37	0.08
Subsoil	0.37	0.08	0.37	0.08	0.37	0.08	0.37	0.08
Trichloromethane (chloroform)	0.1		5		50		50	
Uranium	23		23		33		300	
Vanadium	130		130		130		130	
Xylenes								
Surface	11	2.4	11	2.4	11	2.4	11	2.4
Subsoil	11	2.4	11	2.4	11	2.4	11	2.4
Zinc	200		200		360		360	

All values in Table A3.1 are provided in milligrams per kilogram (mg/kg) unless otherwise indicated. Refer to additional definitions in Appendix 2.

Table Notes

[a] 10^{-5} incremental risk.

[b] 10^{-6} incremental risk.

[c] Although a CSoilQG exists for PCBs, PCDDs and PCDFs, these substances meet the criteria for track 1 substances under the national CCME Policy for the Management of Toxic Substances (persistent, bioaccumulative, primarily the result of human activity, and CEPA-toxic) and should be subject to virtual elimination strategies.

Table A3.1 presents numerical guidelines for selected substances only. Users are advised to consult the complete series of CSoilQGs, introductory texts, factsheets and protocols for specific information and implementation guidance. The series may be downloaded at http://www.ccme.ca/en/resources/canadian_environmental_quality_guidelines/index.html.

Table A3.2 Canadian Water Quality Guidelines for the Protection of Aquatic Life.

	Freshwater		Marine	
Substance	**Short Term**	**Long Term**	**Short Term**	**Long Term**
Arsenic (inorganic)	No Data	5	No Data	12.5
Barium	No Guideline has been developed			
Benzene	No Data	370	No Data	110
Cadmium	1	0.09	NRG	0.12
Chromium				
Total chromium	No Guideline has been developed			
Hexavalent chromium (IV)	No Data	1	No Data	1.5
Trivalent chromium (III)	No Data	8.9	No Data	56
Copper	No Data	Equation[a]	No Data	No Data
Cyanide (free)	No Data	5	No Data	No Data
DDT (total)	Virtual Elimination[b]	Virtual Elimination[b]	No Data	No Data
Ethylbenzene	No Data	90	No Data	25
Ethylene glycol	No Data	192 000	No Data	Insuff Info
Lead	No Data	Equation[a]	No Data	No Data
Mercury (inorganic)	No Data	0.026	No Data	0.016
Nickel	No Data	Equation[a]	No Data	No Data
Nonylphenol (and its ethyloxylates)	No Data	1	No Data	0.7
Pentachlorophenol	No Data	0.5	No Data	No Data
Phenol	No Data	4	No Data	No Data
Polychlorinated biphenyls (PCB)	Virtual Elimination[b]	Virtual Elimination[b]	Virtual Elimination[b]	Virtual Elimination[b]
Polychlorinated di-benzo-p-dioxins/dibenzofurans (PCDD/Fs)	Virtual Elimination[b]	Virtual Elimination[b]	Virtual Elimination[b]	Virtual Elimination[b]
Propylene glycol	No Data	500 000	No Data	Insuff Info
Selenium	No Data	1	No Data	No Data
Tetrachloromethane	No Data	13.3	No Data	Insuff Info
Thallium	No Data	0.8	No Data	No Data
Toluene	No Data	2	No Data	215
Trichloromethane (chloroform)	No Data	1.8	No Data	Insuff Info
Uranium	33	15	NRG	NRG
Vanadium	No Guideline has been developed			
Xylenes	No Guideline has been developed			
Zinc	No Data	30	No Data	No Data

All values in Table A3.2 are provided in micrograms per liter (µg/L). Refer to additional definitions in Appendix 2.

Table Notes

[a] The CWQG for copper, lead and nickel are related to water hardness (as $CaCO_3$). Refer to the specific Guideline Protocols.

[b] Although no CWQG exists for DDT, PCB, PCDD and PCDF, these substance meet the criteria for track 1 substances under the national CCME Policy for the Management of Toxic Substances (persistent, bioaccumulative, primarily the result of human activity, and CEPA-toxic) and should be subject to virtual elimination strategies.

Table A3.2 presents numerical guidelines for selected substances only. Although guidelines have not been developed for each of the listed substances, these substances have been included for comparison purposes with Tables A3.1 and A3.3. Users are advised to consult the complete series of CWQGs, introductory texts, factsheets and protocols for specific information and implementation guidance. The series may be downloaded at http://www.ccme.ca/en/resources/canadian_environmental_quality_guidelines/index.html.

Table A3.3 Canadian Sediment Quality Guidelines for the Protection of Aquatic Life.

Substance	Freshwater		Marine	
	Interim Sediment Quality Guideline (ISQG)	Probable Effect Level (PEL)	Interim Sediment Quality Guideline (ISQG)	Probable Effect Level (PEL)
Arsenic (inorganic)	5.9	17	7.24	41.6
Barium	No Guideline has been developed			
Benzene	No Guideline has been developed			
Cadmium	0.6	3.5	0.7	4.2
Chromium				
Total chromium	37.3	90	52.3	160
Hexavalent chromium (IV)	No Guideline has been developed			
Trivalent chromium (III)	No Guideline has been developed			
Copper	35.7	197	18.7	108
Cyanide (free)	No Guideline has been developed			
DDT (total)	0.00119	0.00477	0.00119	0.00477
Ethylbenzene	No Guideline has been developed			
Ethylene glycol	No Guideline has been developed			
Lead	35	91.3	30.2	112
Mercury (inorganic)	0.17	0.486	0.13	0.7
Nickel	No Guideline has been developed			
Nonylphenol (and its ethyloxylates)	1.4	No Data	1	No Data
Pentachlorophenol	No Guideline has been developed			
Phenol	No Guideline has been developed			
Polychlorinated biphenyls (PCB)	0.0341[a]	0.277[a]	0.0215[a]	0.189[a]
Polychlorinated di-benzo-p-dioxins/dibenzofurans (PCDD/Fs)	0.85 ng TEQ/kg[a]	21.5 ng TEQ/kg[a]	0.85 ng TEQ/kg[a]	21.5 ng TEQ/kg[a]
Propylene glycol	No Guideline has been developed			
Selenium	No Guideline has been developed			
Tetrachloromethane	No Guideline has been developed			
Thallium	No Guideline has been developed			
Toluene	No Guideline has been developed			
Trichloromethane (chloroform)	No Guideline has been developed			
Uranium	No Guideline has been developed			
Vanadium	No Guideline has been developed			
Xylenes	No Guideline has been developed			
Zinc	123	315	124	271

All values in Table A3.3 are provided in milligrams per kilogram dry weight (mg/kg) unless otherwise indicated. Refer to additional definitions in Appendix 2.

Table Note

[a] Although a CSedQG exists for PCBs, PCDDs and PCDFs, these substances meet the criteria for track 1 substances under the national CCME Policy for the Management of Toxic Substances (persistent, bioaccumulative, primarily the result of human activity, and CEPA-toxic) and should be subject to virtual elimination strategies.

Table A3.3 presents numerical guidelines for selected substances only. Although guidelines have not been developed for each of the listed substances, these substances have been included for comparison purposes with Tables A3.1 and A3.2. Users are advised to consult the complete series of CSedQGs, introductory texts, factsheets and protocols for specific information and implementation guidance. The series may be downloaded at http://www.ccme.ca/en/resources/canadian_environmental_quality_guidelines/index.html.

APPENDIX 4 - TRANSPORTATION OF PHC AND OTHER CONTAMINATED SOIL

Hazardous waste must be transported in accordance with the appropriate transport authority. In Nunavut, the transportation of hazardous waste by road is administered by the Department of Economic Development and Transportation under the *Transportation of Dangerous Goods Act* and Regulations. Transport by air must conform to the *International Air Transport Association* (IATA) *Dangerous Goods Regulations* and *International Civil Aviation Organization* (ICAO) *Technical Instructions*. Transport by marine must conform to the *International Marine Dangerous Goods Code*. Further information on transporting hazardous waste by air or marine can be obtained by contacting Transport Canada or by referring to the appropriate Transport Authority.

Soil contaminated with PHC is classified as either a Class 4 Flammable Solid or Class 9 Miscellaneous Waste under the *Transportation of Dangerous Goods Act* and Regulations and its classification, packaging, labeling and placarding while being transported must conform to specific requirements. Schedule I of the Regulations classify soil contaminated with PHC as follows:

Shipping Name:	WASTE SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S. Classification: 4.1 Product Identification Number: UN3175 Packing Group: II
Shipping Name:	WASTE ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. Classification: 9 Product Identification Number: UN3077 Packing Group: III

Land owners and site operators should refer to Schedule 1 of the *Transportation of Dangerous Goods Regulations* for the classification of soil contaminated with other hazardous substances.

Under the federal *Interprovincial Movement of Hazardous Waste Regulations* and *Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations,* no person may transport hazardous waste for the purpose of disposal or recycling in a quantity greater than five kilograms or five liters unless it is accompanied by a completed manifest. Manifest forms provide detailed information on the types and amounts of waste shipped; a record of the parties involved; information on the storage, treatment or disposal of the waste; and confirmation that the waste has reached its final destination. Forms are available from the Nunavut Department of Environment and completion instructions are included on the reverse side of each manifest. Additional information on manifesting can be obtained by referring to the *Environmental Guideline for the General Management of Hazardous Waste*.

Hazardous waste generators, carriers and receivers must be registered with the Nunavut Department of Environment. A unique registration number is assigned to each registrant which enables completion of the manifest document. Copies of registration forms are available at http://env.gov.nu.ca/programareas/environmentprotection/forms-applications or by contacting Nunavut's Department of Environment. Additional information on the registration process can be obtained by referring to the *Environmental Guideline for the General Management of Hazardous Waste*.

A listing of hazardous waste carriers, receivers and management facilities registered to operate in Nunavut is available by contacting the Nunavut Department of Environment.

APPENDIX 5 – GOVERNMENT AND OTHER CONTACTS

Government of Nunavut

NWT/Nunavut 24-Hour Spill Report Line
Phone: (867) 920-8130

Environmental Protection Division
Department of Environment
Inuksugait Plaza
P.O. Box 1000, Station 1360
Iqaluit, Nunavut X0A 0H0
Phone: (867) 975-7729

Motor Vehicles Division
Department of Economic Development and Transportation
P.O. Box 10
Gjoa Haven, Nunavut X0B 1J0
Phone: (867) 360-4615

Workers' Safety and Compensation Commission
Qamutiq Building, 2nd Floor
611 Queen Elizabeth Way
P.O. Box 669
Iqaluit, Nunavut X0A 0H0
Phone: 1-877-404-4407

Department of Community and Government Services
P.O. Box 1000, Station 700
4th Floor, W.G. Brown Building
Iqaluit, Nunavut X0A 0H0
Phone: (867) 975-5400

Office of Chief Medical Officer of Health
Department of Health
P.O. Box 1000, Station 1000
Iqaluit, Nunavut X0A 0H0
Phone: (867) 975-5743

Government of Canada

Aboriginal Affairs and Northern Development Canada
969 Qimugjuk Building, 2nd Floor
P.O. Box 2200
Iqaluit, Nunavut X0A 0H0
Phone: (867) 975-4500

Environment Canada (NWT and Nunavut)
5019 52nd Street
P.O. Box 2310
Yellowknife, Northwest Territories X1A 2P7
Phone: (867) 669-4730

Transport Canada, Northern and Prairie Region
P.O. Box 8550
344 Edmonton Street
Winnipeg, Manitoba R3C 1P6
Phone: 1-888-463-0521

Other Contacts

Canadian Council of Ministers of the Environment[9]
123 Main Street, Suite 360
Winnipeg, Manitoba R3C 1A3
Phone: (204) 948-2090
Website: http://www.ccme.ca

Canadian Association for Environmental Analytical Laboratories[10]
300-1565 Carling Avenue
Ottawa, Ontario K1Z 8R1
Phone: (613) 233-5300
Website: http://www.caeal.ca/

Canadian Standards Association[11]
5060 Spectrum Way
Mississauga, Ontario L4W 5N6
Phone: (416) 747-4000
Website: http://www.csa.ca

[9] CCME works to promote effective intergovernmental cooperation and coordinated approaches to interjurisdictional issues such as air pollution and toxic chemicals. Under the auspices of CCME, the federal, provincial and territorial ministers of environment collectively establish nationally consistent environmental standards, strategies and objectives so as to achieve a high level of environmental quality across the country.

[10] CAEAL is a not-for-profit organization formed in 1989 dedicated to raising the level of competency, consistency, capability, and communication within environmental testing laboratories in Canada. Membership in CAEAL is open to individuals, institutions, user groups, consultants, industrial organizations, regulatory agencies, materials and laboratory equipment suppliers and others interested in the work being carried out in environmental analytical laboratories.

[11] CSA is a not-for-profit membership-based association serving business, industry, government and consumers in Canada and the global marketplace. As an organization, CSA works to develop standards that address a wide variety of needs, such as enhancing public health and safety, occupational health and safety and the environment.